Community News

Friends, family enjoy workshop

Return to community schools with new insights, ideas, tools

Amid shouts of glee, wails of disappointment and gushing jets of pressurized water, JSC employees were treated on a recent Friday morning to a barrage of pressurized water rockets launched from the parking lot east of Bldg. 29.

The launch of the water rockets, made from 2-liter plastic beverage bottles, was the culmination of a one-week teacher workshop held at JSC June 9-13. Each of the 21 educator participants was asked to demonstrate new-found knowledge of rocketry and aerodynamics by designing and assembling a 2-liter water rocket with customized nose cones and stabilizing fins. The result was an enthusiastic but thoroughly wet group and a broad range of vehicle trajectories and altitudes.

This group of educators/rocket scientists comprised the fifth-year class of JSC's Family and Friends Aerospace Professional Development Workshop. Organized specifically for professional active classroom educators who are family members or friends of JSC and contractor employees, the free workshop allowed participants to spend a full and intense week at JSC learning about a variety of space subjects and the broad scope of work done at the center.

The workshop is one of a series of educator workshops offered by the Public Affairs Office's Education and Information Services Branch each summer.

"The Family and Friends workshop is an opportunity to show our gratitude to the many employees who help JSC meet its educational goals throughout the year," said Billie Deason, Public Affairs' Education Team lead.

The quality of the educator workshops JSC produces would not be possible without the enthusiastic support and cooperation of organizations and employees around the center, Deason explained, thanking all those who support endeavors to bring space into the classroom.

The teacher participants, who became students for the week, represented school districts from around the Houston area, as well as from Killeen, Orange, and Corpus Christi, Texas, and Lafayette, La. They are currently teaching in elementary, middle and high schools in their districts.

Workshop Coordinators Mae Mangieri and Norman Chaffee, assisted by Oklahoma State University Education Specialist Charles Anderson, provided the participants with five diverse days of educational and classroom activities, briefings, demonstrations, laboratory and facility visits, and behind-the-scenes interactions with JSC's engineers and scientists. After a presentation by Astronaut Ellen Baker, the teachers were able to visit Mission Control, Ellington Field, the Sonny Carter Neutral Bouyancy Laboratory, thermal vacuum chambers A and B, the shuttle and space station mockups, and the robotics labs, among others. The teachers also were briefed on the International Space Station Program, the X-38 Project, and the Lunar/Mars Exploration Program now being planned.

"The visit to Ellington and to the NBL was just awesome," said Ramona Moore, who teaches at Walter Hall Elementary School in the Clear Creek Independent School District.

Complimentary visits to Space Center Houston and to the new Moody Gardens Discovery Museum were included as extracurricular events, and most of the teachers participated in these enrichment activities.

Embedded in the comprehensive exposure to JSC's broad set of activities, and at the heart of the workshop, was a significant set of "hands-on" classroom activities covering many space topics, which the teachers can take back to their classrooms in the local community, along with new space program insights, knowledge, and techniques.

Above: Teachers Nancy Cope, Jackey Colton, Ramona Moore, Jackie Casavechia and Nancy Clifford participate in a hands-on learning demonstration during the recent Family and Friends Teacher Workshop. Left: JSC's Jose Rangel gives teacher Patricia Kibicek a chance to feel what it is like to sit in the cockpit of a T-38.

"I hope to bring back to my students a way of presenting science across the curriculum, and more efficiently integrate it into all classroom lessons and activities," said Janice Scanlon, a teacher at Barber Elementary School in the Dickinson district. "I want to be able to share the idea of space as not only our future, but a great part of our world today."

"I can use this material to motivate kids to want to learn", added Shirley Boice, a teacher at Garden Villas Elementary School in the Houston Independent School District.

The Family and Friends Workshop received high marks from all the participants.

"We just needed more time" for everything, said Patricia Clark.

Patricia Kubicek from Corpus Christi said the thorough, full and demanding workshop was "lots of fun, like a mini-vacation."

USA team makes 'GIANT' strides in space station planning

The Globally Interconnected Advanced Network Telepresence—or GIANT—program is being developed by United Space Alliance contractors in order to help managers from global space agencies coordinate the activities of the International Space Station crew.

The task of coordinating, planning and executing the daily activities of the six-person crew on a weekly basis is unparalleled in history. Communications coverage, attitude/trajectory, electrical power, crew, and payload requirements are some of the variables operational planners must consider.

These elements must be modeled and integrated to avoid conflicts between systems and payloads on different portions of the station. In addition, planners must coordinate between operational centers spanning nearly every time zone in the world, 18 cultures and 12 languages.

A new planning concept has been developed for the space station which differs dramatically from the current space shuttle method. Called "Just-In-Time Planning," it requires the operations planner to spend his or her week scheduling the station onboard activities for the following week.

Using videoconferencing and data and application sharing, the GIANT program hopes to enhance station planning capability. The use of commercial off-the-shelf hardware and software results in increased time and cost efficiency, and offers the opportunity to exploit the rapid development of new capabilities at steadily lower cost.

USA GIANT Project Manager Jeff Durham, Lead Project Engineer Jim Lyons and Barrios employees Kevin Haase and Ochieng Campbell are working to evaluate telepresence technologies and define the operational needs the system must satisfy. Consulting support is provided by engineers at NASA's Jet Propulsion Laboratory.

Video rates of 15 to 30 frames per second, full color, with moderate to good resolution, are obtainable over a digital telephone connection using modern compression techniques on the PC-based desktop systems being evaluated. The use of such ISDN connections provides a simple videoconference connection activated using a user-friendly point-and-click interface not much more difficult than dialing a phone.

Data exchange is even more important for the ISS Operations Planner, and several technologies are being examined to meet these requirements. The approach of the GIANT project team is to implement graphical, real-time, interactive data exchange as a way to reduce the number of face-to-face meetings. Users will be able to discuss and annotate any document on an electronic whiteboard, allowing simultaneous edits from multiple sites. One user may write comments and draw in red, another in blue, while a third highlights important text or uses a pointer.

Perhaps the most powerful data interaction capability is that of application sharing, in which a user in Houston can launch an application and share it with the members of a conference and participants in another locations may edit he document.

GIANT reached a significant milestone in March when it was used operationally for the first time to support current operation planning work. A video- and data-conference was held with representatives from NASDA, the national Japanese space agency in Tokyo, to discuss a standard Operations Planning Flight Controller software tool being developed for the Mission Control Center in Houston.

The software developers gave a real-time demonstration of the user interface and the functionality of the application prototype to their counterparts in Tokyo while simultaneously interacting via video.

Tickets available in advance

Mexican-American engineers, scientists host scholarship dinner

The fourteenth annual scholarship banquet sponsored by the Society of Mexican-American Engineers and Scientists will take place at 7 p.m. Saturday, Aug. 2, at the Gilruth Center Ballroom.

This year's banquet, entitled: "The New Millennium: New Challenges in Engineering and Science," will bestow $10,000 in scholarships to deserving local high school and college students.

The event will begin with a tour of the Mission Control Center at 5:30 p.m., followed by a social hour at 7 p.m. and dinner at 8. JSC Director George Abbey will give the keynote address.

The annual gala is designed to promote the involvement of professional engineers in community projects and to inspire students to pursue their educational dreams. Through the opportunities provided, MAES hopes to improve educational and employment opportunities for engineers and scientists through cooperative efforts with industry and government.

MAES takes an active role in this endeavor by encouraging and assisting financially disadvantaged students for careers in engineering and science. Since 1984 MAES has given more than $120,000 to deserving high school and college students. The majority of the scholarship funds are raised through industry and government donations.

The Society of Mexican-American Engineers and Scientists is a national non-profit organization with four Houston area chapters.

Tickets to the banquet are $25 per person. For more information, contact Gerald Valle at x38835. or Mike Ruiz at x38169.

JSC Safety Alert

Lightening Strike Awareness

What Happened

While accurate data is elusive, there is general agreement that lightning is one of the leading weather-related cause of deaths and injuries. Numerous outdoor work-related activities have been noticed at JSC during prolific lightning storms. While people working outdoors during lightning producing storms have been fortunate so far, continued lack of attention to safety during these storms will eventually result in catastrophe.

What You Can Do

When you first hear thunder, begin to plan your lightning defense. Lightning often precedes rain, so don't wait for the rain before suspending activities. If outdoors, avoid water, metal objects including electric wires, fences, structural steel, machinery, motors, and power tools. Unsafe places to be include tents, open-sided rain shelters, underneath trees, near flagpoles, high mast light poles, facility roofs, high ground, and wide open spaces where you are the tallest object. Where possible, find shelter in a building or in a fully enclosed metal vehicle such as a car, truck or van with the windows completely shut.

Lightning's proximity can be referenced by noting the time from its flash to the bang of the associated thunder. For each five second count from FLASH to BANG (F-B), lightning is one mile away. Thus a F-B of 10 = 2 miles; 15 = 3 miles. It is recommended that you activate your lightning safety defense (seek shelter) no later than an F-B count of fifteen (3 miles).

If indoors, stay away from open doors and windows. Do not use the telephone, and, if possible, take headsets off. Lightning may strike electrical and phone lines and induce shocks. Turn off and stay away from appliances, computers, power tools, and television sets, if possible.